

Amendments to the Specification:

The paragraph beginning at Page 14, lines 1-10, is to be amended as follows:

Inside the nozzle chamber 1 is a paddle type device 7 which is interconnected to an actuator 8-80 through a slot in the wall of the nozzle chamber 1. The actuator 8-80 includes a heater means eg. 9 located adjacent to an end portion of a post 10. The post 10 is fixed to a substrate.

When it is desired to eject a drop from the nozzle chamber 1, as illustrated in Fig. 2, the heater means 9 is heated so as to undergo thermal expansion. Preferably, the heater means 9 itself or the other portions of the actuator 8-80 are built from materials having a high bend efficiency where the bend efficiency is defined as

$$\text{bend efficiency} = \frac{\text{Young's Modulus} \times (\text{Coefficient of thermal Expansion})}{\text{Density} \times \text{Specific Heat Capacity}}$$

The paragraph beginning at Page 15, lines 5-14, is to be amended as follows:

Firstly, the actuator 8-80 includes a series of tapered actuator units e.g. 15 which comprise an upper glass portion (amorphous silicon dioxide) 16 formed on top of a titanium nitride layer 17. Alternatively a copper nickel alloy layer (hereinafter called cupronickel) can be utilized which will have a higher bend efficiency where bend efficiency is defined as:

$$\text{bend efficiency} = \frac{\text{Young's Modulus} \times (\text{Coefficient of thermal Expansion})}{\text{Density} \times \text{Specific Heat Capacity}}$$

The titanium nitride layer 17 is in a tapered form and, as such, resistive heating takes place near an end portion of the post 10. Adjacent titanium nitride/glass portions 15 are interconnected at a block portion 19 which also provides a mechanical structural support for the actuator 880.

The paragraph beginning at Page 17, lines 10-15, is to be amended as follows:

The printhead also includes, with respect to each nozzle 3, side walls 6 on which the nozzle plate is supported, a chamber 7 defined by the walls and the nozzle plate 2, a multi-layer substrate 8 and an inlet passage 9 extending through the multi-layer substrate to the far side (not shown) of the substrate. Referring briefly to Figure 22, the multi-layer substrate 8

comprises a silicon substrate portion 21, drive transistors (not shown) in the region 22, standard CMOS interconnect layers 23 and a passivation layer 24.

-A looped, elongate heater element 10 is suspended within the chamber 7, so that the element is in the form of a suspended beam. The printhead as shown is a microelectromechanical system (MEMS) structure, which is formed by a lithographic process which is described in more detail below.